

We Claim:

1. A prefilmer for a fuel injection arrangement comprising a body having a fluid flow surface and a downstream edge, the prefilmer arranged so that when working in operative association with the fuel injection arrangement fuel flows over the surface to the downstream edge, from where the fuel is shed, characterised in that the prefilmer further comprises a fluid flow mixing means to, in use, enhance the mixing of fuel and air.
2. A prefilmer for a fuel injection arrangement as claimed in claim 1 characterised in that the fluid flow mixing means comprises projections extending generally downstream from the downstream edge.
3. A prefilmer for a fuel injection arrangement as claimed in claim 2 characterised in that the projections are generally trapezoidal in shape.
4. A prefilmer for a fuel injection arrangement as claimed in claim 1 characterised in that the projections are generally triangular in shape.
5. A prefilmer for a fuel injection arrangement as claimed in claim 1 characterised in that the projections define trapezoidal notches therebetween.
6. A prefilmer for a fuel injection arrangement as claimed in claim 1 characterised in that the projections define triangular notches therebetween.
7. A prefilmer for a fuel injection arrangement as claimed in claim 2 characterised in that projections are radially inwardly angled.
8. A prefilmer for a fuel injection arrangement as claimed in claim 2 characterised in that the projections are radially outwardly angled.
9. A prefilmer for a fuel injection arrangement as claimed in claim 2 characterised in that the projections are alternately radially inwardly and outwardly angled.

10. A prefilmer for a fuel injection arrangement as claimed in claim 2 characterised in that the angle of the projections is between 0 and 45 degrees relative to an injector axis.

5 11. A prefilmer for a fuel injection arrangement as claimed in claim 1 characterised in that the fluid flow mixing means comprises the downstream edge configured in a generally sinusoidal form in its axial direction.

12. A prefilmer for a fuel injection arrangement as
10 claimed in claim 1 characterised in that the fluid flow mixing means comprises the downstream edge configured in a generally sinusoidal form in its radial direction.

13. A prefilmer for a fuel injection arrangement as
15 claimed in claim 1 characterised in that the fluid flow mixing means comprises the downstream edge configured in a compound form which is both sinusoidal in form in its radial and axial directions.

14. A prefilmer for a fuel injection arrangement as
20 claimed in claim 1 characterised in that the fluid flow mixing means comprises lands disposed to the downstream edge, the lands are configured to generate and impart, in use, vortices into the passing airflow to enhance the mixing of fuel and air.

15. A prefilmer for a fuel injection arrangement as
25 claimed in claim 14 characterised in that the lands comprise a leading edge, two opposing sides, a leeward face and a base attached to the fluid flow surface.

16. A prefilmer for a fuel injection arrangement as
30 claimed in claim 1 characterised in that the fluid flow mixing means is asymmetrically arranged about the prefilmer.

17. A prefilmer for a fuel injection arrangement as claimed in claim 1 characterised in that the prefilmer is generally annular.

35 18. A prefilmer for a fuel injection arrangement as claimed in claim 1 characterised in that the surface is an

inner surface of the prefilmer and the fluid flow mixing means is disposed to the inner surface.

19. A prefilmer for a fuel injection arrangement as claimed in claim 1 characterised in that the surface is an
5 outer surface of the prefilmer and the fluid flow mixing means is disposed to the outer surface.

20. A prefilmer for a fuel injection arrangement as claimed in claim 1 characterised in that during low fuel flows the fluid flow mixing means enhances the mixing of
10 fuel and air and provide regions of rich and lean fuel/air mixtures.

21. A fuel injection arrangement for a gas turbine engine incorporating a prefilmer as claimed in claim 1.

22. A gas turbine engine comprising a fuel injection
15 arrangement as claimed in claim 21.